

The Educational Museum at Clark University

Catalogue of the Department of School Hygiene

BY

WM. H. BURNHAM
AND
M. EVELYN FITZSIMMONS

WORCESTER
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THE EDUCATIONAL MUSEUM AT CLARK UNIVERSITY: CATALOGUE OF THE DEPARTMENT OF SCHOOL HYGIENE

By WM. H. BURNHAM and M. EVELYN FITZSIMMONS

INTRODUCTION

The general purpose of the Museum, namely, to show the evolutionary and dynamic aspects of education, is well illustrated in the department of hygiene. The aim of this department is fourfold.

First, the aim is to collect illustrative material of various kinds in the field of general hygiene, with special emphasis on development, nutrition, and preventable diseases.

Second, the aim is to show the evolution of the modern schoolhouse and the structure and contents of a model schoolroom from the hygienic point of view. For this purpose charts, ground plans, working drawings, models, photographs, apparatus, and the like are collected. All of these are significant, whether they represent what is new or what is obsolete to-day. In the case of school furniture, for example, the aim is to show the evolution of the school seat and the school desk. Hence it is desired to collect the oldest seats and desks available and those representing all stages of development, from primitive seats down to the best adjustable seats of to-day. This series is not yet complete, but a good beginning has been made in the seats and desks already purchased and in the charts which show the evolution of the school seat and desk.

Third, the aim is to collect material illustrating the development and hygiene of the child, especially at school age. The attempt is made, by a series of models and charts, to show the development of the human being from the earliest embryonic stages throughout the whole period of development to complete maturity, and, when it is possible, to supplement this with illustrations of the stages of senescence, thus sketching the whole life history of the human individual.

The attempt is also made here to collect models and charts illustrating common abnormalities that can be remedied by proper treatment during the period of growth. A good illustration of this is the set of models showing normal and malocclusion of the teeth. The classification is that of Dr. Angle of St. Louis. The models were prepared by the kindness of Dr. L. W. Baker of Harvard and are all made from actual

cases. This is a typical case in point, because by suitable treatment, especially if given in the early years, normal development and normal occlusion can be obtained. The great importance of such treatment is shown by the fact that the investigations of Dr. P. H. Wright and others indicate that with the dental abnormalities several nasal defects are likely to be correlated, and that normal development of the teeth and the arch of the mouth is necessary for the normal development of the bony structure of the mouth and nose in general and of great importance for the general health of the individual. In many other cases of abnormal development similar results could be obtained probably by proper care and treatment during the early years. Models and charts illustrating any form of development and remediable abnormalities are desirable.

Here and in the section on school sanitation the aim also is to show the evolution and present status of our knowledge in child hygiene and the methods and results of work in this field, especially the results of investigations in regard to the various school diseases, the incidence of these diseases, the effect of antitoxins, of cleanliness, etc.

Fourth, the aim is to obtain material to illustrate the history and evolution of mental hygiene and the hygiene of instruction. While under this head only a small amount of material has as yet been obtained, it is hoped ultimately to make this an important exhibit.

Only a beginning has yet been made in the hygienic department of the Museum. The aim, however, is a definite one, namely, to show the evolution of hygiene and especially of child hygiene, and to collect the latest and best hygienic devices and apparatus. While at present in each section the material is inadequate and under many topics nothing has yet been collected, new accessions are being constantly made and it is hoped in the near future to fill many of the existing gaps.

In spite of the incompleteness of the collection, it has seemed wise to publish this catalogue of the present contents of the department of hygiene, together with a statement of its aims, for the convenience of those who use the material and also to illustrate the general plans and purpose of the Educational Museum.

The classification is elastic, and no effort has been made to prevent a certain amount of overlapping. The divisions are not rigorously logical but made for convenience, and the aim has been to place the emphasis on child hygiene and school hygiene rather than to give what might seem a natural and logical classification of the whole field of hygiene.

The Museum takes this opportunity to express its cordial thanks to the many persons who have contributed to its con-

tents or made suggestions for its development. Many physicians, hygienists, and educators have expressed their interest in this collection and have contributed important information. It is hoped to realize a large part of these suggestions; and on behalf of the University the writers wish to express their great indebtedness to those who have responded so generously and have expressed their interest in the aims and scope of the Museum.

The letters NH on the charts in the Museum refer to the section, Hygiene. The numbers in parentheses are the accession numbers, inserted merely for the convenience of the Museum. The other numbers refer to the following scheme of classification, which is similar to that used in section N, the department of Education, in the University Library.

I GENERAL

- 11 Prevention of disease
- 12 Nutrition
- 13 Special physiological functions

2 ARCHITECTURE AND SCHOOL SANITATION

- 21 Playgrounds, outdoor schools, etc.
- 22 Building plans etc.
- 23 Heating, lighting, ventilation, and water supply
- 24 Furniture and apparatus
 - 241 Blackboards, etc.
 - 242 Desks and seats
 - 243 Drinking cups
 - 249 Miscellaneous
- 25 Cleanliness
- 26 Hygienic apparatus
- 29 Miscellaneous

3 HYGIENE OF THE CHILD

- 31 Growth and physiological age
- 32 Posture
- 33 Eye
- 34 Ear
- 35 Voice, nose, throat, and teeth
- 36 Diseases, first aid, etc.
 - 361 Scarletina
 - 362 Diphtheria
 - 363 Measles
 - 364 Typhoid fever
 - 369 Miscellaneous
- 37 Effects of alcohol
- 39 Miscellaneous

4 MENTAL HYGIENE AND THE HYGIENE OF INSTRUCTION

- 41 Psychological age
- 42 Mental hygiene
- 43 Fatigue
- 44 Period of study, etc.
- 45 Grading
- 46 Physical exercise
- 47 Reading, spelling, etc.
- 49 Miscellaneous

I GENERAL HYGIENE

II PREVENTION OF DISEASE

Kean, J. R.—Chart showing mortality and morbidity from typhoid fever, 2nd division, 7th army corps. Jacksonville, Fla., 1898. (From *Jour. of Am. Med. Assoc.*, Aug. 26, 1911, p. 714.) 34 x 42 in. (1007)

Among 10,759 soldiers there were 2,693 cases of typhoid fever, resulting in 248 deaths, while the total death roll from all causes was only 281.

Kean, J. R.—Chart showing mortality and morbidity from typhoid fever for maneuver division, San Antonio, Texas, Mar. 10-Jy. 10, 1911. (From *Jour. of Am. Med. Assoc.*, Aug. 26, 1911, p. 714.) 42 x 42 in. (1006)

This chart shows that among 12,801 soldiers at San Antonio in four months there was only one case of typhoid fever, no deaths from this disease, and only 11 deaths in all, while at the same time there were cases of typhoid fever and some deaths in that city. The difference between this and the 1898 mortality (see preceding chart) is attributed to modern sanitary precautions and preventive inoculation with typhoid anti-toxin.

Single service milk bottles. (Gift of Single Service Pack. Co.)

In quart and pint sizes, made of paper coated with paraffine. (1495)

Tuberculosis exhibit. 34 pictures and 14 mottoes, each $7\frac{1}{2} \times 9\frac{1}{2}$ in., concerning prevention of tuberculosis, mounted in a wooden frame. Brayton. (1413)

Tuberculosis pictures. $7\frac{1}{2} \times 9\frac{1}{2}$ in. Brayton. (1419)

63 photographs, showing wholesome and dangerous industries, working conditions, district nursing, outdoor life, etc.

Nietner, J. & Lorentz, Fr.—*Tuberculosis chart.* (Wandtafel zur Tuberkulosebelehrung.) $37\frac{1}{2} \times 50\frac{1}{2}$ in. Müller. (1149)

This chart presents seven exhibits on the study of tuberculosis by the German Central Committee, with explanations by J. Nietner and Fr. Lorentz.

I. Exposed chest, showing heart, lungs and viscera *in situ*. II. Cluster of air vesicles taken from lungs, highly magnified. III. Relation of blood capillaries to air vesicles. IV. Three stages of the development of the disease in a single air vesicle. V. Four stages of development of the disease in a single lobe of the lung. VI. Tubercle bacilli as they would appear under microscope magnifying 2,000 diameters. VII. Curves showing death rate for 10,000 in Prussia since 1875; while general death rate decreases from more than 260 to less than 160 per 10,000, deaths from tuberculosis decrease from 32 to 15 per 10,000 in the same period.

Pauchet, Victor.—*La vie hygiénique; règlement de chaque jour.* $21\frac{1}{2} \times 29\frac{1}{2}$ in. Paulin. (1153)

Outline chart of hygienic regulations for each day, as to morning exercises, toilet, breakfast, manner of eating, precautions as to ventilation and temperature during the day, and the hygienic conditions of the sleeping room. The chart

also gives general directions concerning foods, menus, drinks, clothing, houses, etc., as well as concerning the more social factors of sports, recreations, punishments, etc. (Loaned by the Library.)

See also 369 Miscellaneous diseases. Trumpp, J.—Children's diseases.

Lantern slides.

5	Lantern slides on the fly.	
23	" " " " hygiene (miscellaneous).	
5	" " " " milk.	
12	" " " " mosquitoes.	
3	" " " " typhoid fever.	
12	" " " " tuberculosis.	

Motion picture films. Kleine. (1414)

The Fly Pest.

This is an instructive film for the motion picture machine showing blow flies laying eggs in putrid meat; eggs attacked by the Ichneumon fly; the hatch; maggots in various stages; pupae; the fly, wingless, emerging from the earth; full grown; tongue and foot of the fly, greatly enlarged; various examples of flies carrying contagion, etc.

12 NUTRITION

Composition of food materials.—15 charts prepared by C. F. Langworthy, U. S. Department of Agriculture. 20½ x 26½ in.

1. Milk and milk products	(1164)
2. Eggs and cheese	(1165)
3. Meat, fresh and cured	(1166)
4. Fish, fish products and oysters	(1167)
5. Butter and other fat-yielding foods	(1168)
6. Cereal grains	(1169)
7. Bread and other cereal foods	(1170)
8. Sugar and similar foods	(1171)
9. Roots and succulent vegetables	(1172)
10. Legumes and corn	(1173)
11. Fresh and dried fruit	(1174)
12. Fruit and fruit products	(1175)
13. Nuts and nut products	(1176)
14. Compositions, uses and function of food	(1177)
15. Dietary standards	(1178)

20 lantern slides on nutrition. Foltz & Fuller.

Nutritive value of some of the most important foods.

Jars containing relative amounts of the various constituents of foods. Bad. Lehr. A.

Bacon	(1909)
Beer, Brown	(1907)
Bread, Rye	(1902)
Bread, White	(1906)
Butter	(1894)
Cheese, Pot	(1901)
Cheese, Rich	(1900)
Cheese, Skim-milk	(1893)
Cocoa ("Stollwerck")	(1912)
Cream	(1899)

Eggs	(1910)
Fish, Dried	(1903)
Fruit, Dried	(1896)
Fruit, Fresh	(1905)
Kohlrabi	(1892)
Meat, Medium fat	(1898)
Meat (Medium fat, smoked and salted)	(1904)
Milk, Cow's	(1914)
Mushrooms	(1897)
Peas	(1911)
Potato	(1895)
Wheaten flour	(1913)
Wine, Table	(1908)

These glass jars contain the exact number of grammes of the actual food constituents, water, proteid, etc., in a sample of 100 grammes of several of the principal foods, e. g., the five jars for Rich Cheese contain:

Cheese.	Water	Protein	Fat	Salt
100 grammes	33	35	30	2
Those for Meat (Medium fat, smoked and salted)				
Meat	Water	Protein	Fat	Salt
100 grammes	47	31	11	11

The pedagogical value of a device like the above lies in its concreteness, in the strong sensory appeal it makes, in the live interest it awakens by presenting the exact constituents of foods used every day.

Milk.—5 quart milk bottles, each containing one of the ingredients of milk in amount equal to its proportion of the whole quart. Ed. Ex. Co. (1891)

13 SPECIAL PHYSIOLOGICAL FUNCTIONS

Strips of figures for use in a zoetrope, showing the movements of the stomach in digestion. Harv. App. Co. (1163)

Zoetrope for above. Int. Inst. Co. (1198)

2 ARCHITECTURE AND SCHOOL SANITATION

21 PLAYGROUNDS, OUTDOOR SCHOOLS, ETC.

Outdoor schools.—13 photographs of Chicago outdoor schools. 6 x 8 and 11 x 14 in. McCormick. (1801-1802)

Eskimo suit, gloves and boots, such as are worn in outdoor schools. McCormick. (1797-1799)

22 BUILDING PLANS, ETC.

Model school buildings at Kirksville, Mo. (1104)

This shows three floors, heating and ventilating systems, seating and lighting facilities, with method of construction, drainage, sanitation, etc. (See Bull. of the First District Normal School, Kirksville, Mo., June, 1911.)

School houses.

14 photographs of school buildings (Chicago) of modern design; bound in booklet form. (1110)

5 model Texan school buildings. (Procured through the courtesy of Prof. A. C. Ellis, University of Texas.)

(1793-1796, 1800)

Pamphlets on model buildings. Gift of Dr. R. W. Corwin.
(1421)

"Little red schoolhouse," Dist. 5, Abbot Hill, Wilton, N. H.
Colored photograph. Plumer. (1917)

8 blue prints of the Winsor School, Longwood, Mass. 27
x 36 in. R. Clipston Sturgis, Architect. (1696-1703)

9 blue prints of the Sarah J. Baker primary school, Lewis
District, Boston, Mass. 24 x 40 in. J. A. Schweinfurth and
John J. Craig, Architects. Gift of Boston Schoolhouse Com-
mission through the courtesy of Mr. Charles Logue.
(1833-1841)

27 blue prints of the Abraham Lincoln School, Winthrop-
Brimmer District, Boston, Mass. 24¾ x 34½ in. A. W.
Longfellow, Architect. Makepeace. (1995-2021)

12 blue prints of the primary school, Eliot and Hancock
Districts, Boston, Mass. 23½ x 35½ in. Winslow & Bigelow,
Architects. Makepeace. (1842-1853)

21 blue prints of the Cheverus School, Blackinton District,
East Boston, Mass. 22 x 36 in. Brainerd & Leeds, Archi-
tects. Cobe. (1955-1975)

23 HEATING, LIGHTING, VENTILATION, AND WATER SUPPLY.

Burgerstein, Leo.—Wandtafeln zur Schulhygiene. 39½ in. x
55 in. K. k. Schulb. Verl. (1016d-1016f)

1. Water Supply. (1016d)

This chart deals with the arrangement of wells, arrange-
ments for drinking, details of construction and individual
cups. Fig. 1, Soil drainage and the virtues of shallow and
deep wells; Fig. 2, Child using sanitary drinking fountain;
Figs. 3-5, Mechanism of sanitary drinking fountains; Figs.
6 and 7, Racks for holding individual drinking cups.

2. Ventilation. (1016e)

Fig. 1, Proper positions for inlet and exhaust with means
for preventing back currents in a commercial ventilator. Fig.
2, Disadvantages of ventilation through doors and windows;
Fig. 3, Device for cleaning and filtering the air and for secur-
ing proper humidity as air enters room; Fig. 4, Ventilation
by streams of air directed from natural wind currents by
scoops through pipes.

3. Heating. (1016f)

Plans for warm water, low pressure steam, and gas heating
systems, with special reference to the methods for insuring
proper circulation in pipes; also devices for keeping the cur-
rent of heated air as near the radiating surface as possible.

6 lantern slides on ventilation. Foltz & Fuller.

24 FURNITURE AND APPARATUS

241 Blackboards, etc.

Schulwandtafel aus Holz im Gestell zum drehen; zwei
Schreib-flächen. 100 x 150 cm. Stechert. (485)

Reversible wooden blackboard on portable wooden frame,
horizontal central pivot, adjustable to three heights. Detach-
able chalk and eraser box.

Schwamm- und Kreide-Behälter. Stechert. (484)

An individual wall case for sponge and chalk.

Dustless removable blackboard trough. (1103)

Model of shallow screen-top trough for collecting dust from blackboards and erasers.

242 *Desks and seats.*

Chandler desk. Chandler. (1055)

Non-adjustable desk with lift top and enclosed book receptacle.

Chandler desk and chair. Chandler. (1052)

School desk adjustable as to height, and with top adjustable to plus and minus distances; lift top, enclosed book receptacle, outside and inside pencil rack, vulcanized rubber ink well, etc. Separate stool with back, both stool and back having separate vertical adjustment.

Chandler desks and chairs, No. 3 and No. 4. Chandler. (1053-1054)

Chair and desk each adjustable to height, mounted on portable platform, lift top, enclosed book receptacle, pencil racks, ink well, etc.

Moulthrop movable school chair. Langslow. (1867)

This has a simple writing shelf instead of a desk, which is adjustable both as to height and distance, and a box for books under the seat.

American steel adjustable desk and chair, with sliding top. Am. Seat Co. (1810)

The aim has been to combine the essentials of a hygienic seat, and there is no filigree work or the like to catch the dust.

Esmarch, E. von.—Anschauungstafeln für Vorträge über die Schulbank. 30¼ x 50½ in. Müller. (1021-1036)

Sixteen wall charts representing the numerous problems of adapting school seats to hygienic positions of the body. This set of charts shows the evolution of the school seat and desk.

1. Origin of school seat; chief proportions. (1021)

Relation of seat and desk, illustrating plus and minus distances.

2. Development of seat and back rest. (1022)

Relation of seat and back, with numerous types of back rests.

3. Plus and minus distance. (1023)

Positions of pupils with seats at plus and minus distances, two sitting and two standing postures.

4. Harmful posture with too great difference. (1024)

Improper positions in seat with too great difference; two side and two back views.

5. Movable desk covers. (1025)

Movements of desk top for convenience of school work; (a) back fold; (b) horizontal swing; (c) horizontal slide; (d) lift desk and back swinging seat.

6. Movable seats. (1026)

Movable seats with various positions of the articulating support; (a) low, medium, and high points of support; (b) swinging, sliding, folding, rotating seats, with characteristic movements.

7. Multiple seats with sections. (1027)

Two patterns of multiple benches with openings.

8. Standing at side, with double seated bench. (1028)

Proper positions in seat for convenience of stepping out and standing beside the seat.

9. Distribution of pupils in the classroom. (1029)

Distribution of pupils in a large and a small room, the number and width of the aisles, with multiple benches.

10. Cleaning a classroom; clearing the floor. (1030)

This chart shows the width of desks and aisles, with a method of hinging the desk on one side to the floor for convenience in sweeping.

11. Full seat and middle seat system. (1031)

This system (a) has seat and back on the same platform; (b) has desk and seat on same platform, but uses the adjacent desk as back; (c) desk employs seat attached to it on the same platform with adjacent desk.

12. The Mittelholm system. (1032)

13. Double school bench with foot board. (1033)

School bench and desk, full size, with points for measuring height, distance, etc.

14. School bench with movable seat. (1034)

Simple movable seats, stationary desks. Metal frame of standards and bases with wood mountings for desk seat and back.

15. Home seats. (1035)

Adjustments on seat, desk, back and foot rest.

16. Postures in writing. (1036)

Proper and improper positions in seat for both vertical and slant writing.

Library chair; adapted from measurements of the Vienna School Expert Commission, by Dr. William H. Burnham. (1057)

Vienna School Expert Commission's desk, largest size. (1056)

This is a plain box desk with top adjustable to plus and minus distances, arranged so that only minus distance opens ink well for writing. Solid box seat with compound curve in both seat and back. The whole is mounted on a portable open frame.

Gauge for adjusting chairs and desks. (1052a)

This standard gauge consists of a stick, with an ordinary inch scale on one side, and on the other side a scale graduated to 11/16 inch divisions. On the stick slide cross arms, one for measuring the pupil in sitting posture, and the other for measuring the chair. The double scale automatically gives height of desk when height of chair is

determined. (See Boston Schoolhouse Dept., Annual Report, 1906, p. 86.)

Walter, Anton.—*Schulzimmer-Einrichtung*. 23 x 29½ in. (Loaned by the Library.) Walter. (1151)

This chart shows plans for arrangement of school furniture in relation to doors, windows, etc., in the school-room.

Walter, Anton.—*Schulbank*. 31 x 40 in. (Loaned by the Library.) Walter. (1152)

This chart gives working drawings for school seats and desks, of six different sizes, for pupils from 100 to 160 cm. in height. It gives also measurements for four different sizes. The height of seats for girls should be 1 cm. less than the chart indicates. These drawings are designed to enable any carpenter to build seats and desks adapted to the needs of children in rural districts.

"There is a definite conception in regard to the essential features of an hygienic seat and desk. The main points are as follows: (1) The height of the seat should equal the length of the child's leg from the bend of the knee to the sole of the foot. (2) The width of the seat should equal about three-quarters the length of the upper leg. (3) The seats should have a back-rest for the small of the back above the hip-bones opposite the last lumbar vertebra. This is especially important. (4) There should be a support for the back under the shoulders. (5) The seats should be sufficiently large to enable the child to change position, and the front edge of the seat should be a little higher than the back and rounded off. (6) The dimensions of the desk should be sufficient for the accommodation of books and the like. (7) The slope should be about 45 degrees for reading and 15 degrees for writing. (8) The *difference*, or distance from the seat to the edge of the desk, should be such that the child, when sitting erect, can easily place both arms on the desk without lowering or raising the shoulders. A convenient rule is that the difference should equal the distance from the seat-bone to the elbow plus 1.5 cm. (9) The distance of the seat from the desk may be zero, plus, or minus. For convenience in taking the seat and in standing a plus distance is required; for writing a minus distance of 2 inches is necessary. Such are the essential features, and there is practically a consensus of all authorities in regard to them. To insure them, both seat and desk must be adjustable to different heights. And it is of prime importance not only to have the seat of the right height, but also to have the correct difference and the proper distance, since upon these chiefly depends a correct sitting posture. That the distance may be plus for reading and minus for writing, it is necessary to have either a movable seat or a sliding desk. For obtaining a slope of 45 degrees for reading and 15 for writing, the desk must be adjustable to different angles; and an ideal seat would have a back-rest adjustable to the individual, such as some teachers' chairs are provided with. In a word, the seat and desk should be automatically adjustable

as regards height, difference, distance, backrest, and desk-slope." (Quoted from the article on School Hygiene by Wm. H. Burnham in Johnson's Cyclopedia, 1899. Vol. 10.)

243 *Drinking cups.*

Aseptic drinking cup. Gift of Am. Water Sup. Co. (1046)

Both folding and non-folding patterns, made from paraffine paper.

Purifold drinking cup. Gift of Burn. Mfg. Co. (1047)

Aseptic paper drinking cup, folding pattern.

Sunflower drinking cup. Gift of Meyer Bros. Dr. Co. (1051)

These cups are of the standard pattern, made of aluminum and covered with a metallic lid.

Finback drinking cup cabinet and cups. Loaned by Stone and Forsyth. (2042)

Home-made drinking cup.

249 *Miscellaneous apparatus.*

Sanitary pencil holder. Bardeen. (1494)

Fibre wastebasket. (1422)

Jacobus pneumatic ink-well. Gift of Jacobus Co. (1117)

Glass non-spillable ink-well for use in school desks. Arranged to hold the ink even when the desks are tipped over by janitor in sweeping.

Tannewitz ink-well. Gift of Tannewitz Co. (1832)

Liquid soap container. Gift of Stone & Forsyth. (2043)

Rhoads' writing machine. Limeburner. (1919)

This is a device for writing with closed eyes, not for the blind, but to relieve those suffering from eye-strain or in danger of it.

25 CLEANLINESS

Scott Tissue Towels. (Gift of Scott Paper Co.) (1108)

In sanitary fixture. Designed to provide individual clean towels.

Paper towels. (Gift of Stone & Forsyth.) (2044)

Brushes. (Gift of the Somerville Brush Co.)

Sanitary bowl brush. (1220)

Radiator brush. (1221)

Wall brush, and handle. (1222)

Cotton duster. (1223)

Improved window brush. (1225)

Improved duster, called a "Dust catcher." (1224)

Cabinet for disinfecting books by moist hot air. (Ordered)

"The apparatus consists of a double walled case of galvanized iron. The space between the walls is filled with water. Heat is supplied from beneath. The shelves for the books are perforated or of wire. The moisture is supplied by water

dripping from the roof onto a flat dish of porous material which is soaked full and then gives up the water in the form of vapor. The thermometer and hair-hygrometer are fastened to the inside of the door, which is fitted with a glass pane so that they can be read." (L. B. Nice, *Ped. Sem.*, 1911. Vol. 18, p. 201.)

26 HYGIENIC APPARATUS

Hygrodeik. Hohmann & Maurer. (1040)

An instrument for determining the humidity of the atmosphere by means of the wet and dry bulb thermometers. By adjusting sliding pieces to the height of the mercury in the two thermometers, an index is made to point to a number on a standard chart, indicating the humidity of the atmosphere.

Hygrometer. Kny-Scheerer. (2035)

Pettersson-Palmqvist apparatus for determining carbon dioxide. (1044)

"The instrument consists of a measuring vessel, A,* connected with a U-shaped burette, B, from which communication can be made by a small stop-cock, b, a manometer fg, containing a graduated scale nearly horizontal; and two stop-cocks, f and g, by means of which communication can be made with the air. One side of the manometer, f, is in communication with the measuring vessel A. The burette, B, contains a saturated solution of caustic potash (KOH). The flask, E, contains mercury, and by raising it when the stop-cock, c, is open, the mercury will rise in the flask, A, and the air will be forced out. If the flask, E, be lowered, the mercury will flow from the measuring tube, and the amount of air entering A can be measured by the gradations. When the measuring tube, A, is full of air, the stop-cocks, c, b, f, and g, being open, the position of the drop of liquid in the horizontal tube of the manometer is accurately read. The stop-cocks, c, b, f, and g are closed, that at b, opened, and the vessel, E, raised, driving the air out of the measuring tube, A, into the absorption burette, B. This operation of raising and lowering the flask, E, is repeated several times; it is then lowered, and the air is drawn over into the measuring burette; the cock, a, is then opened, and the vessel E manipulated until the reading on the horizontal scale agrees with that in the beginning of the test. The reading of the graduated tube A, gives directly the amount of carbon dioxide. The determinations are made with air of ordinary humidity, and there is a slight correction due to this fact, which is not likely to equal, in any case, one part of carbon dioxide in one million parts of air." (R. C. Carpenter, "Heating and Ventilating Buildings." Quoted by W. E. McGown in *Ped. Sem.*, 1910, v. 17, p. 487.)

Thermograph, Self-recording.—7 days. Cambridge B. S. Co. (1863)

Scale reads from -30 to 110 F., subdivided into 1-5 degrees.

Barograph, Self-recording barometer.—8 days. Cambridge B. S. Co. (1862)

* The lettering that follows refers to the cut of the instrument which has not been reproduced here.

Thermometer, Weather report. Queen. (1869)

Ozonator. Gen. Elec. Co. (1864)

A small ozone generator to destroy odors and purify the air.

Psychrometer, Sling. Hohmann & Maurer. (1154)

This instrument consists of a wet and dry bulb thermometer, provided with a handle, which permits the thermometers to be whirled rapidly; the bulbs being thus strongly affected by the temperature and moisture of the air, the humidity can be quickly determined.

Barometer, School. Cambridge B. S. Co. (1483)

Aluminum scale, graduated into the Metric and English systems.

Rendtorff air thermometer. Cambridge B. S. Co. (1484)

Wolpert, H.—Original Carbacidometer. Bad. Lehr. Co. (893)

Apparatus for testing the amount of carbon dioxide in the air. Simple pamphlet text accompanies the set. The apparatus is equally serviceable in the home and in the school room.

Lambrecht's Polymeter. Stechert. (1987)

A widely used German hygrometer.

Sanifacient Humidifier. Sanifacient H. Co. (1918)

This apparatus consists of a reel, covered with cloth, adjusted so that it dips into a tank of water when revolved by an electric fan. It is used especially for humidifying the air in large store-rooms for tobacco, but will provide sufficient moisture for humidifying an ordinary small schoolroom.

Anemometer, Hicks. Cambridge B. C. Co. (1861)

An instrument for measuring the velocity of the wind. This anemometer has 6 dials, reading to 10,000,000 feet, with disconnector for fly-wheel.

Pleier's Raumwinkelmesser. Schmidt & H. (1947)

An apparatus for testing the light at a school desk by measuring the "area-angle," i. e., the area of the sky in "square-degrees" that sends light to the desk, reduced to a horizontal plane with regard to the angle of incidence of the light.

3 HYGIENE OF THE CHILD

31 GROWTH AND PHYSIOLOGICAL AGE

6 models of various stages of gestation. Bad. Lehr. A. (1948-1953)

1. Embryo about 6 weeks old, considerably enlarged. (1948)
2. Uterus with embryo in first month of gestation. (1949)
3. Uterus with embryo in third month of gestation. (1950)
4. Uterus with foetus (pelvic presentation) in 4-5 month. (1951)
5. Uterus with foetus (breech presentation) in 5th month. (1952)
6. Uterus with foetus (normal presentation, placenta with umbilical cord visible). (1953)

Human anatomical model (female). Gresham. (2025)

A life-size reproduction of the dissections of the various parts of the human body, showing the relations of internal organs to one another as well as the interior of the uterus and its contents at the different stages of pregnancy.

X-ray photographs (16) of the carpal bones and epiphyses of the wrist and hand at different stages of osseous development (taken by Dr. T. M. Rotch of Harvard University). 8 x 10 in. and 10 x 12 in. (1715-1716)

Such illustrations of the development in the wrist and hand are supposed to be correlated with the general physical development and may be used, in the opinion of Dr. Rotch, as signs of physiological age. (Rotch, T. M. Roentgen ray methods applied to the grading of early life. Proc. 4th Cong. Am. Sch. Hyg. Assoc., 1910, pp. 184-199.)

Figures showing the physical proportions of children at different ages according to the canons of Geyer and others. (2026-2040)

Boy half a year old. (2026)

Boy one year old. (2027)

Boy three years old. (2028)

Geyer's canon for boy three years old. (2029)

Boy six years old. (2030)

Girl four to five years old. (2031)

Geyer's canon for seven-year-old boy. (2032)

Boy seven years old. (2033)

Boy ten years old. (2034)

Geyer's canon for ten-year-old girl. (2035)

Girl eleven years old. (2036)

Boy twelve years old. (2037)

Geyer's canon for twelve-year-old girl. (2038)

Normal stages of development in youth according to Geyer. (2039)

The proportions of growth. (2040)

Tables of growth, by Dr. Franz Boas. (2045-2048)

1. Physiological development. (2045)

2. Annual increments for different parts of the body. (2046)

3. Absolute measurements for New England school children. Males. (2047)

4. Absolute measurements for New England school children. Females. (2048)

(See the article on Growth in Monroe's Cyclopedia of Education, vol. 3. N. Y., Macmillan, 1912).

Burgerstein, Leo.—Wandtafeln zur Schulhygiene. 39½ x 55 in. K. k. Schulb. V. (1016a-1016b)

Chart A, Morbidity. (1016a)

Growth in weight and height, study period and sleep; curves show the relative increase in height and weight between the ages of 12 to 20 inclusive. "Key of Stockholm investigated morbidity, increase in height and weight, study periods and sleep in the High School pupils of Sweden. He utilized the method of Hertel of Copenhagen. The data secured came from over eleven thousand pupils. The details of this investigation are here charted by Burgerstein. He shows in figure

No. 1, Chart 'A,' among other things, that the percentage of morbidity increases up to fourteen years of age and then decreases up to seventeen years, and then increases to the end of the high school period. He states that these curves may be accepted as representing not only conditions existing in Sweden but conditions as they exist generally; and that the requirements of school work should take into consideration the natural fluctuations of the resistance of the individual against permanently harmful influences and that special care should be taken in arranging school work to prevent the increase of morbidity during the prepubescent period.

"Figure Two, Chart 'A,' shows that the total working period (recitation and study) among the Swedish children investigated by Key is on the average almost seven hours a day for eleven-year-old pupils, and is over eleven hours daily for the pupils in the highest classical and scientific classes; and that, throughout, the average periods of sleep are more than one hour too short—'nine hours for pupils eleven years old, and seven hours for pupils nineteen years old.' These conditions are admitted to be local, but Burgerstein points out the fact that scanty local reports made in other countries lead one to assume that the total day's work is frequently too much and the amount of sleep is frequently too little.

"The text under Chart 'A' further brings out general additional interesting facts. First, in general the pupils in Key's investigation who worked in excess of the average number of hours daily showed a higher morbidity by 3.2% than those pupils who worked less than the average number of hours. (In Stockholm this difference was 5.2%.) Second, the pupils who spent less than the average amount of time in home study included 52.2% of those pupils who had difficulty in keeping up with their classes. The pupils who work overtime appear to be the more capable pupils. The text states that Key found that only those pupils get enough sleep who sit in classes that are considerably lower than the class prescribed for their ages." (T. A. Storey, *Ped. Sem.*, 1911. Vol. 18, p. 104.)

Chart B, influence of season upon resistance to diseases and upon growth. Curves cover all the months except August and September, for the first eight grades of school. (1016b)

"This chart is made up of three parts. (1) A dotted curve represents the admissions by months to five hospitals for children in Vienna for the years from 1898 to 1904, and covers 40,144 cases in total. (2) A heavy lined curve represents the absences by months from school in a small Austrian city. The pupils were between eleven and fifteen years of age.

"The curve of morbidity is based on hospital returns for children of both sexes between the ages of 0 and 14 years who came from the poorer classes in a large city. The curve for absences is based on returns from pupils between the ages of eleven and fifteen coming from better homes, and attending boys' schools in a small city. In spite of the variety of conditions concerned both curves show from a hygienic point of view, unfavorable periods of the year for Central Europe. The greatest number of admissions to the children's hospitals and the greatest number of absences from school occurred near the end of the calendar year and during March and April.

"(3) The third set of facts presented in Chart 'B' refer to the variations in gains in weight in a group of one hundred girls observed by Hanssen. These girls were from six to sixteen years old. They were weighed once each quarter for five years. The results of these observations are plotted on the chart and show that the greatest gains came during July and August, the vacation period, and that the gains decreased from September to June in the school period. These facts are taken to indicate a need for a vacation during the month of December and another in March or April." (T. A. Storey, *Ped. Sem.*, March, 1911. Vol. 18, p. 105.)

32 POSTURE

Goldthwait, Joel E.—Photographs illustrating erect posture and malpositions.—6 photographs. 21 x 30 in. (930a-930f)

(See Goldthwait's "Relation of posture to human efficiency," etc., p. 16 et seq.)

A. Man standing in slouch position, a departure from the normal pose with flexion of the knees and absence of lumbar curvature. (930a)

"There are many variations of these met with which demand consideration if anything approaching normal health is the standard desired in the treatment of these individuals."

B. Boy standing with hands in pocket. (930b)

"If we leave the habit of standing with the hands in the low trousers pockets uncorrected, our treatment of the round shoulder will avail little, because in this position the shoulders must drag forward and the chest must be flattened."

C and D. Early Greek figures, erect, side and front views. (930c, 930d)

"The head is erect and in such balance that all the muscles must be in easy contraction, making possible any movement forward, backward or sidewise. . . . The shoulders are erect, in which position all the muscles are in easy contraction. . . . So, also, of the legs, there is no strain, but every part is ready for full duty with the least waste in either time or energy."

E. Figure of a modern athlete. (930e)

"As finely balanced as any of the early Greeks. . . . It is not to be wondered at that such a type is able to win events from less well-poised competitors."

F. St. Gaudens' figure of Lincoln. (930f)

" . . . which is remarkable in that even though the figure is depicted in repose, with one knee relaxed, the trunk is perfectly erect so that the poise of the head is free from strain and the visceral function, or support, can in no way be disturbed."

Spinal curvature. (1485)

47 photographs from the Children's Hospital, Boston, showing spinal curvature.

Manual training charts. Beijers. (994a-994o)

16 charts in black and white. These charts show proper positions while working with various tools in manual training room, with one chart (No. 16) showing effects of malpositions.

Posture at desk. (1050)

Chart shows two common malpositions in writing, with the type of temporary lateral spinal curvature accompanying each.

Brillengeradhalter nach Müller. (1045)

An instrument in the form of open spectacles for pupil to wear, to prevent lowering the head over the desk while reading or studying. Arranged to close the visual opening automatically when the head is lowered.

33 EYE

Cohn, Hermann.—Täfelchen zur Prüfung der Sehleistung und Sehschärfe. (Loaned by the Library.) Priebatsch. (1041)

A simple device for displaying the letter E in various positions in testing the child's visual acuity. Brief test gives tables and discussion on the use of the device.

Fürst, M.—Sehprüfungstafel. Voss. (1058)

Folding slate crayon book with graduations and distances at which child should distinguish white on black as will be required in blackboard work.

Pflüger—Sehproben und Sehprüfung. Optotypi Pflüger. 2. Aufl. Sallmann. (1020)

A set of charts for testing visual acuity, employing the letter E in various positions and sizes from those almost microscopic to 15 cm. in length, with chartings of the distance at which a normal eye should distinguish them. Accompanying the charts also is a wooden letter E, 6 cm. by 8 cm., for use in the same manner as the charts.

McCallie, J. M. Eye tests for the illiterate (10 cards).

McCallie, J. M. Eye tests for the literate (12 cards).

Seggel, K. L. F.—Sehproben-Tafeln zur Prüfung des Lichtsinns. (Loaned by the Library.) Riedel. (1042)

Charts with black letters on a white ground and with black letters on light, medium and dark gray grounds. There is also a brief discussion, with tables for calculating visual acuity with varying degrees of contrast. Put up in booklet form, with charts as folded inserts.

Snellen's vision chart for schools. Hardy. (1416)

Roethlein, B. E. Relative legibility of different faces of printing types. (1412)

Allport, Frank E.

Four pamphlets on the eyes and ears of school children, with proof of vision chart. (1420)

17 lantern slides.

34 EAR

See 33 Eye. Allport's pamphlets.

35 VOICE, NOSE, THROAT, AND TEETH

Model of the larynx, with tongue. Stechert. (36)

Model of a tooth, much enlarged. Montaudon. (Ordered)

8 plaster of Paris models showing normal and malocclusion of the teeth. Roberts. (1977-1984)

The different forms of malocclusion are represented by models made from actual cases, according to Dr. Angle's classification, under the direction of Dr. Lawrence W. Baker of Harvard University.

Jessen.—Sound and decayed teeth. (*Wandtafel über gesunde und kranke Zähne.*) $23\frac{1}{4} \times 39\frac{1}{4}$ in. Lehmann. (70)

This chart shows (a) milk-teeth and permanent teeth, with tables of age at which the units of each set should appear; (b) superposition of the two sets in growth; (c) various stages of tooth decay; (d) a mouth of decayed teeth, with the same set after having been scientifically treated; (e) some supernumerous growths of teeth in young children and results of lack of care of teeth.

Framed photograph of girl showing facial distortion caused by poor, neglected teeth. $24\frac{3}{4} \times 30\frac{1}{2}$ in. Educ. Ex. Co. (1888)

Framed photograph of the same girl showing improvement resulting from treatment for distortion of teeth. $24\frac{3}{4} \times 30\frac{1}{2}$ in. Educ. Ex. Co. (1889)

4 lantern slides on the teeth.

36 DISEASES, FIRST AID, ETC.

Eschner.—First aid for accidents. 88 x 66 cm. Wachsmuth.

1. First aid for fractures and wounds. (*Die erste Hilfe bei Knochenbruch und Verwundungen.*) Bandaging wounds and broken bones by emergency methods. (327)

2. Artificial respiration. (*Die künstliche Atmung.*) Resuscitation of the drowning, fainting, etc., according to the Sylvester method of procedure. (328)

First aid box for schools. (*Verbandkasten für Schulen.*) Arnold. (490)

Conveniences for giving first aid to injuries of various kinds, put up in a neat closed box, 5 x 9 x 12 inches. Contains 17 articles, including large bandage cloth, prepared aseptic bandages of mull, cambric, and gauze, medicated cloths for flesh wounds, medicated and aseptic cottons, vials of liniments and disinfectants, medicated salve, gutta percha paper, adhesive tape, pins, etc. The whole kit is for schools, is inexpensive, and in convenient form for emergency use.

American Red Cross First Aid Box. School size. Amer. Red Cross. (1994)

American Red Cross First Aid Charts. 5 charts. 20 x 28 in. Amer. Red Cross. (1989-1993)

1. Skeleton. (1989)
2. Muscles. (1990)
3. Circulation. (1991)
4. Fracture and dislocation. (1992)
5. Arteries and points of pressure for controlling hemorrhages. (1993)

Lantern slides.

6 lantern slides on children's diseases.

6 lantern slides on hookworm disease.

- 361 *Scarlatina*.—*Chart* showing ratio of morbidity and ratio of mortality of scarlatina in Boston per 10,000 of the population, from 1886 to 1909, inclusive. 42 x 61½ in. (Boston City Hospital, South Department, January, 1910. *Chart F.*) (1039)

Shows in addition, average ratio of morbidity and mortality in Boston, 1886-1894, and 1895-1909. The ratio of morbidity for these two periods decreased 6.97 and the ratio of mortality decreased 1.26.

Chart showing ratio of mortality of scarlatina per 10,000 of the population in Boston, for sixty-nine years, 1841-1909, inclusive. (Boston City Hospital, South Department, January, 1910. *Chart E.*) (1010)

Appended note: "Since 1895 when the South Department was opened there has been no general epidemic of scarlatina in Boston as compared with previous years." This chart also shows that during the 33 years since 1876 no year has had a ratio of mortality of scarlatina above 6 per 10,000, whereas during the 36 years immediately preceding, 27 years had a ratio above 6 per 10,000. On the other hand, during the 36 years, 1841-1876, but one year (1865) shows ratio of mortality below 3 per 10,000, while since 1876, 23 years have been below 3 per 10,000 and 9 years have been below 1 per 10,000 of the population.

See also 362 Diphtheria, and 369 Diseases, Trumpp's chart.

- 362 *Diphtheria*.—*Chart* showing cases of diphtheria and scarlatina in Boston, by months, reported to the Board of Health from 1890 to 1909. 42 x 56 in. (Boston City Hospital, 1910. *Chart G.*) (1009)

Summated by months, showing the summer depression of the curves of morbidity.

Chart based on the report of the Public Health and Marine-Hospital Service for the six largest cities in the U. S. in 1908. 42 x 42 in. (Monthly Report of the State Board of Health of Massachusetts, September, 1910, page 400.) (1019)

Both diphtheria and scarlatina curves show a drop from 3,000 and 6,000 respectively to 1,600 and 1,300 during the first two months of vacation, with a characteristic rise, especially in the case of diphtheria, during the month of October.

Chart based on U. S. Census reports, showing monthly incidence of diphtheria. 42 x 61½ in. (Monthly Bulletin of the State Board of Health of Massachusetts, September, 1910, page 399.) (1038)

This chart presents two curves, one for school children, 5 to 14 years, and the other for children from birth to 5 years. The two are similar, showing a very much lower ratio in vacation months than in school months.

Chart showing per cent of mortality of diphtheria at the Boston City Hospital proper, and at the South Department, from 1888 to 1909. 42 x 44 in. (Boston City Hospital, January, 1910. *Chart A.*) (1013)

This chart shows the decrease in the per cent of mortality from diphtheria since the introduction of antitoxin in 1894 to be from nearly 40% for the six years 1889-1894, to less than 4% for the six years 1904-1909.

Chart showing ratio of the mortality of diphtheria per 10,000 of the population in Boston from 1876 to 1909. (Boston City Hospital, January, 1910. Chart C.) (1014)

This chart shows decrease from 18.2 to 1.8 during the years 1894 to 1909 under the use of antitoxin with average ratio of mortality from 1876 to 1894 of 14.25 and from 1895 to 1909 of 5.17.

Chart showing ratio of mortality of diphtheria per 10,000 of the population in Boston and Brooklyn from 1886 to 1908, inclusive. 42 x 48 in. (Boston City Hospital, South Department, January, 1910. Chart I.) (1012)

This chart shows a decrease in mortality for the period 1894 to 1908 for Boston, of 18.2 to 3.2 and for Brooklyn, 12.2 to 3.6.

Chart showing ratio of mortality of diphtheria per 10,000 of the population in Boston and New York (old city) from 1886 to 1908. 42 x 48½ in. (Boston City Hospital, January, 1910. Chart H.) (1008)

This chart shows a decrease in the ratio of mortality for diphtheria under use of antitoxin from 1894 to 1908 for Boston, 18.2 to 3.2, for New York 12.2 to 4.3.

Chart showing ratio of mortality of diphtheria per 10,000 of the population in Boston and Philadelphia from 1886 to 1908, inclusive. 42 x 47 in. (Boston City Hospital, South Department, January, 1910. Chart K.) (1011)

This chart shows a decrease in the ratio of mortality since the introduction of antitoxin, 1894 to 1908, for Boston, from 18.2 to 3.2, Philadelphia from 9.3 to 3.3

See also 369 Diseases, Trumpp's chart.

363 Measles

See 369 Diseases, Trumpp's chart.

364 Typhoid fever

Map of Florin Village, Lancaster Co., Penna., showing schematically source of typhoid infection. Scale: 150 feet to the inch. 21½ x 27 in. Gift of Dr. S. G. Dixon. (1437)

Cross section of cesspool and well in Florin Village, Lancaster Co., Penna., showing source of typhoid infection. Scale: Horizontal and vertical, 10 feet to the inch. 21½ x 27 in. Gift of Dr. S. G. Dixon. (1438)

369 Miscellaneous

Trumpp, J.—Die ansteckenden Kinderkrankheiten in Wort und Bild. 100 x 60 cm. Lehmann. (32)

Wall chart in colors, with discussions showing: Figs. 1-2, Measles in mouth, throat and body; Fig. 3, German measles,

eruptions on face and neck; Figs. 4-5a, Scarlatina on face and body and in throat; Fig. 6, Diphtheria in mouth and throat; Fig. 7, Chickenpox on back and face; Fig. 8, Smallpox, eruptions on back and head. There is also a text discussion of the symptoms, period of incidence, time of exclusion of the convalescents, etc., of each of these diseases, and in addition, of whooping-cough, influenza, typhoid fever, and mumps. The text is printed on and forms part of the wall chart.

Refining and concentrating antitoxins in the Lederle Antitoxin Laboratories. 16 x 39½ in. Gift of Schieffelin.

(1200)

Glass-covered case containing samples of the different antitoxins in the different stages of their preparation.

37 EFFECTS OF ALCOHOL

Cabot, Richard & Horsley, Victor, Compilers.—Decreasing medical use of alcohol.—(Chart based on statistics from Massachusetts General Hospital, Boston, and on reports from the London County asylums.) 22½ x 28½ in. Scient. Temp. Fed. (183)

This chart shows that in the London Country asylums the use of malt liquors has decreased to about 1/160 of its former use. The use of wines and spirits has also decreased, while during the same period the staff and patients have increased. In the Massachusetts General Hospital the decrease in the use of drugs from 1898 to 1907 has been 45.2% and of alcoholic liquors has been 77.7% during the same period. "It indicates a rapid and striking change among the members of the hospital staff, especially in the last five years, when it has become generally known that alcohol is not a stimulant, but a narcotic, and that drugs can cure only about one-half a dozen of the diseases against which we are contending." (Cabot, Richard. *Boston Medical and Surgical Journal*, April 15, 1909.)

Demme—Alcoholism and degeneration.—Investigation made by Prof. Demme, Bern, 1878-1889. (From *Ueber den Einfluss des Alkohol auf den Organismus des Kindes*. Stuttgart, F. Enke, 1891.) 22½ x 28½ in. Scient. Temp. Fed. (181)

Shows the proportion of physical and mental deformity in 10 very temperate families and 10 very intemperate families. Among the temperate families, of 61 children 82% are normal and 18% defective. Among the intemperate families, of 57 children 17.5% are normal and 82.5% are defective.

Gruber, Max & Kraepelin, Emil, Editors.—Wandtafeln zur Alkoholfrage. 100 x 78 cm. Lehmann. (30a-30j)

1. Expenditure for spirituous liquor among workmen. (30a)

This chart shows the relative expenditure for food, clothing, books, liquors, etc., in families with large, medium and small incomes, and the way in which it varies in the large and small families.

2. Price and value of the most important foods. (30b)

This shows the amount of food value in proteids, carbohydrates and fats which can be purchased for one Mark in the

various food products, including wines and liquors, also the relative amount of food, water and waste in a given amount of various foods.

3. Alcohol and degeneration. (30c)

The first part of this chart is from the same study as Demme's, given above. The third part is Arrivé's study of the influence of alcohol on depopulation, based on 81 drinking and 245 temperate families, having respectively 433 and 847 children. The infant mortality of the two groups are, before birth, 11.5% and 6.6%; at birth, 4.6% and 2.6%; between birth and the sixth year, 33.5% and 21.1%; living at six years of age, 50.4% and 69.7%. The second is Bunge's study of the effect of alcohol on tendencies of children to tuberculosis and nervous and mental diseases even when the parents show none of these tendencies.

4. Influence of alcohol and tea on the adding of numbers of one place. (Kraepelin's method.) (30d)

This chart shows three curves: one of the rate of addition under the influence of no artificial stimulation; second, under stimulation by alcohol; third, under stimulation by tea. During the first half hour no stimulants are taken. The three curves are close together with a range of only 705 to 720. Fifteen minutes later the range is 699 to 846, with alcohol and tea respectively in the extremes, the effect of the former being to decrease the amount of work done, that of the latter to increase it.

5. Influence of daily indulgence in alcohol on ability to add figures. (30e)

This chart represents the amount of addition two people did each morning for 27 days. During the first 6 days neither took stimulation. There is rapid improvement in each. Then for 12 days the one who had been making the highest average began to take alcohol. The one not indulging soon became superior and continued to improve while the other soon reached a maximum and declined. The influence was marked.

6. Alcohol and school. (30f)

From R. Hecker's study of the use and influence of alcohol among 4,582 children in the people's schools in Munich. (*Jahrbuch für Kinderheilkunde*, N. F., v. 63, p. 470.) This chart shows the per cent of children who never use liquor, who drink irregularly, and who drink daily. The per cent of each which do good, medium, and poor work, is also shown, and the relation which each group bears to the entire number of children studied.

7. Alcohol and mortality. (30g)

This chart is based on Westergaard's study of mortality and morbidity. The chart shows that for every 1,000 general deaths the rate would be 953 for professional men, 1,642 for hotel and barkeepers, and 1,725 for waiters. The rate for each profession in each of the common diseases is also shown. The chart also gives expectation and actual mortality in the class of abstainers in English life insurance companies. A third section of the chart shows the rate for each of the callings dying at the various ages from 20 to 65.

8. Alcohol and personal violence. (30h)

This chart represents cases from Kürz's study on the Prophylaxis of Brutal Crimes. (Zur Prophylaxe der Roheitsdelikte, *Monatsschrift für Kriminalpsychologie*, II, 27.) The first part represents the proportion of 1,143 assault cases occurring on each of the days of the week, holidays included with Sundays. The second part represents the proportion of 1,715 cases of assault occurring in the taverns (742), dwelling-houses (86), street (98), places of work (87), place not determined (102).

9. Alcohol and crime. (30i)

This chart is from Baer's study of alcohol and crime, based upon 17,155 cases in reformatories and 7,392 cases in penitentiaries. The chart shows the per cent of convicts for each of the various crimes who were moderate drinkers and who were habitual drinkers. It is interesting to note that among cases of immorality and crimes against persons moderate drinkers are in greater number, while habitual drinkers are found guilty more often of crimes against property, arson, etc.

10. Life history of a common drunkard from birth to his entrance to the insane asylum at the age of 46. (30j)

This chart shows every month from 1860 to 1906, giving time spent at liberty, in jails, prisons, penitentiaries, work-houses, and his final entrance to the asylum. First incarceration is July, 1878, second in August of the same year. After that the longest unbroken period of liberty was from July, 1894, to January, 1896, which followed but for two short detentions the longest single imprisonment, from June, 1892, to June, 1894. In all the chart shows 56 imprisonments upon various charges.

MacNicholl, T. Alexander, Compiler.—Alcohol and disabilities of school children. (From *Journal of American Medical Association*, February 2, 1907.) 22½ x 28½ in. Scient. Temp. Fed. (182)

A study of mental dullness and nervous and organic diseases based on 3,711 children of 1,100 families. Mental dullness in children of drinking parents but abstaining grandparents, 73%; in children of abstaining parents but drinking grandparents, 78%; in children where both parents and grandparents are abstaining, 4%. Nervous and organic diseases in children having hereditary alcoholic taint, 77%; in children free from alcoholic taint, 18%.

Schnyder, L.—“Do you work hard?” Alcohol and muscle work.—Ergographic experiments in muscle fatigue. (From *Alkohol und Muskelkraft*. Bonn, Emil Strauss, 1910.) 22½ x 28½ in. Scient. Temp. Fed. (180)

Shows the comparative amount of work done in ten days without alcohol and in ten days with alcohol.

39 MISCELLANEOUS

“Don't's” for children.—Card, “Remember these things,” posted in public schools in Providence, R. I. 24½ x 30½ in. Ed. Ex. Co. (1890)

4 MENTAL HYGIENE AND THE HYGIENE OF INSTRUCTION

41 PSYCHOLOGICAL AGE

42 MENTAL HYGIENE

15 *lantern slides* on the brain and nervous system. Williams, Brown & Earle.

43 FATIGUE

Adersen's chart.—(*Körpertemperatur und Hautsensibilität*) showing variations in dermal sensitivity tested by the aesthesiometer as compared with diurnal variations in bodily temperature. (1043)

44 PERIOD OF STUDY, ETC.

Burgerstein, Leo—*Wandtafeln zur Schulhygiene*. 39½ x 55½ in. K. k. Schulb. V. (1016c)

Chart C. Influence of afternoon sessions on morbidity and voluntary attention. "Fig. One in Chart 'C' presents the results of the investigations of Schmidt-Monnard of Halle upon several thousand boys and girls in middle class schools. The figure shows that anemia, habitual headache, nervousness, insomnia, lack of appetite, etc., were more common among children with afternoon sessions than with children with morning sessions. These complaints were generally more common among the girls than among the boys.

"Figure Two in Chart 'C' illustrates the result of Schuyten's observations in the public schools of Antwerp. These observations were made daily and cover over six hundred children between the ages of seven and fourteen years for a period of two years. They indicate that the percentage of cases showing voluntary attention was greater in the morning sessions than in the afternoon sessions, save in May, June and July. During these months the noon hour is more favorable for recreation and play. Schuyten regards this as an explanation for the increased afternoon attention in May, June and July." (T. A. Storey, *Ped. Sem.*, March, 1911. Vol. 18, p 105.)

45 GRADING

Johnson, G. E. *Partial perspective of public education in Pittsburgh*. (1037)

This chart has special reference to physical exercises, playground associations, amusement parks, day nurseries, vacation schools, with special reference also to the type of activity for the various ages and leading to the various occupations. The chart is also suggestive as to the best physical and mental preparation for courses in high schools, evening schools, special schools, colleges, and universities.

Sonderklassen-System der Mannheimer Volksschule. (Internat. Kong. f. Schulhygiene, 1904. 4 Bd. S. 210.) (1015)

Shows the system of grading in the Mannheim Volksschule with diagrammatical sketch of the system of regular and irregular promotions, demotions and repetitions.

46 PHYSICAL EXERCISE

Schmidt, F. A.—Influence and results of physical exercises in youth. 22½ x 30½ in. Büxenstein. (1048)

Shows various physical exercises for securing strength, skill, quickness, endurance, alertness, etc., with the physiological effects on lungs, heart, circulation, metabolism, muscles, nerves, etc., together with lasting bodily, moral and aesthetic gain for each kind. Verbal statement, not diagrammatical. (Loaned by Dr. W. H. Burnham.)

Schmidt, F. A.—Summary of the physical exercises most beneficial at the different ages of life. Bonn, n. d. (1018)

Shows physiological character and prevailing needs of exercises for ages in five triennial periods, 6 to 20 years; also the specific kinds of exercises which satisfy these needs and diagrammatically the age at which each exercise should be begun and discontinued. The shading shows the amount of the various exercises suitable for the different ages. (Loaned by Dr. W. H. Burnham.)

Johnson, G. E.—Summary of active plays and games most beneficial at different ages, adapted from Dr. F. A. Schmidt's chart of physical exercises. (1017)

This chart gives specific games for securing the kinds of exercise recommended by Dr. Schmidt (see above), and shows diagrammatically by triennial periods up to 20 years the age at which each should be emphasized. Done in blue print, 30 x 60 inches. (Loaned by Dr. W. H. Burnham.)

Rothfeld's Schulturnbefreiungstafel. Müller. (2023)

The department of Psychology in the University has a large collection of psychological apparatus important in the study of mental hygiene, but the Museum makes no attempt to duplicate this nor the neurological material in the department of Biology. In other departments of the Museum there are also some things related to the subject of hygiene but not mentioned here. It is hoped that catalogues of the rest of the collection will be prepared later. The material of the Museum is largely available for teachers and the writers would request the co-operation of teachers and others, and specially request information when old desks and seats and the like are to be disposed of as such material is often valuable to the Museum.

The writers wish to express their indebtedness to President G. Stanley Hall, who conceived the original plan of the Museum and collected a large part of the material, for his constant advice and encouragement in regard to its development, to Dr. Louis N. Wilson for valuable suggestions, to Dr. Leroy W. Sackett and Mr. Kirkman K. Robinson for assistance in describing the charts mentioned above, and to many others who have rendered valuable aid.

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